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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/709,075

04/12/2004

Yuan-Hsun WU

NTCP0032USA

3074

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7590

06/23/2006

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION

P.O. BOX 506

MERRIFIELD, VA 22116

EXAMINER

ROSSOSHEK, YELENA

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

LC

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/709,075 | <b>Applicant(s)</b><br>WU, YUAN-HSUN |  |
|                              | <b>Examiner</b><br>Helen Rossoshek   | <b>Art Unit</b><br>2825              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/17/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to the Application 10/709,075 filed 04/12/2004.
2. Claims 1-9 are pending in the Application.

### ***Oath/Declaration***

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: Application serial number and Filing date are missing. Moreover, the date next to the inventor signature is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Claim 1 and its dependencies are rejected, because of the omitted elements in claim 1: while claim 1 having a limitations describing a shape of a test pattern layout and concluding in the last limitation of having the shape of the test pattern layout as capital "H", it lacks construing the "H" shape of the layout.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3 rejected under 35 U.S.C. 102(e) as being anticipated by Liao et al. (US Patent 7,014,965).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to claims 1 Liao et al. teaches a test key layout within photolithography method to reduce the impact of lens aberration (col. 3, ll.15-16) including portions of the lithography processes for fabricating a trench-type dynamic random access memory (col. 4, ll.16-19) as shown on the Fig. 3A within area 205 (col. 4, ll.20-23), comprising: a first test pattern substantially disposed at a center position of a test key area within a plurality of specific transfer patterns 220 resided on the test layout area 205 as shown on the Fig. 3A, wherein first test pattern consisting a pair of rectangular shaped symmetric patterns placed in the center of layout area 205, wherein said first test pattern consists of a pair of rectangular shaped symmetric patterns having a length L and a width W, and wherein said test key area comprises a reference X-Y coordinate within specific transfer patterns 220 each having rectangular shape with long

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and short sides respectively parallel to X and Y coordinates shown on the Fig. 3A (col. 4, ll.24-31); a second test pattern arranged in proximity to said first test pattern in 45 degree directions with respect to said first test pattern within plurality of specific transfer patterns 220 laying out on the test pattern area 205, wherein second test pattern is placed next to the first test pattern in the left upper corner of the layout 205 in substantially 45 degree direction with respect to the first test pattern; and a third test pattern disposed next to said first test pattern along an X axis of said reference X-Y coordinate within third test pattern placed under the second test pattern and is along an X coordinate to the left from the first test pattern; wherein said first test pattern, said second test pattern, and said third test pattern are arranged like a capital "H" within said test key area within plurality of test patterns 220 laying out on the test layout area 205 in a shape of the capital "H" as shown on the Fig. 3A.

With respect to claims 2, 3 Liao et al. teaches:

Claim 2: wherein said test key layout is made on a photomask comprising an array of deep-trench (DT) capacitor patterns, and wherein said rectangular shaped symmetric patterns have a dimension that is substantial equal to dimension of said DT capacitor patterns (col. 3, ll.14-16; col. 4, ll.16-19; ll.26-28);

Claim 3: wherein said test key layout is capable of exclusively monitoring 3-foil aberration effect without affected by co-existed COMA aberration effect within scanner 5 of the photolithography apparatus shown on the Fig. 1 (col. 1, ll.46-53), wherein the photolithography method performs analysis for reducing the impact of lens aberration (col. 3, ll.14-16).

***Allowable Subject Matter***

8. Claims 4-9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach test key layout made on a photomask comprising an array of deep-trench capacitor pattern, wherein four test patterns arranged on the test key layout including plurality of rectangular shaped patterns having length  $L$  and width  $W$  and wherein distance  $S_1$  from the first pattern along  $Y$  axis of the reference  $X$ - $Y$  coordinate and  $S_1 = 3L$ ; second test pattern is disposed a distance  $S_2$  from third test pattern and  $S_2 = L$ ; third test pattern is disposed a distance  $S_3$  from the first test pattern and  $S_3 = W$  as claimed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Rossoshek whose telephone number is 571-272-1905. The examiner can normally be reached on 7:30-4:30.

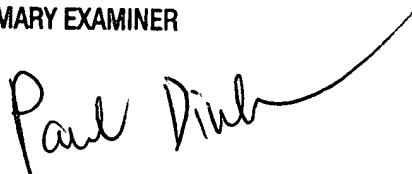
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner Helen Rossoshek

PAUL DINH  
PRIMARY EXAMINER

A handwritten signature in black ink that reads "Paul Dinh". The signature is written in a cursive style with a long, sweeping underline that extends to the right.